University of Alberta

Who Will Be the New Nurses? An Examination of the Career Goals of Leadership Students

by

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Abstract

The nursing profession has identified the need for the development of leadership; therefore it would be beneficial to attract students who demonstrate leadership skills. A systematic review to assess the career aspirations, perceptions, and influences of gifted students guided the development of a survey of high school students in and out of a leadership-training program. The survey findings revealed little difference in how the leadership and nonleadership students ranked the desirability of various careers, their current career aspirations, or the encouragement they would receive to pursue a career in nursing. The majority of these students would not consider a career in nursing, and their responses revealed a lack of knowledge on leadership/career opportunities in nursing. This indicates the need to better promote nursing among students with leadership abilities to make nursing more attractive as a career choice.

This work is dedicated to my husband,

Michael Craig Miller,

For his never-ending support, patience, and housekeeping skills.

And to my daughter,

Bailey Kathleen Miller,

Who will be ecstatic to have her mother back.

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Table of Contents

CHAPTER 1: INTRODUCTION 1
- Statement and Importance of the Problem 1
- Research Objectives 3
- Design and Methods 3
  - Study 1: Systematic Review of the Research Literature 4
  - Study 2: Data Analysis of Research Survey 5
- Significance of the Study Results for Nursing 6
- Overview of the Thesis 6

CHAPTER 2: STUDY 1: GIFTED AND TALENTED STUDENTS' CAREER ASPIRATIONS AND INFLUENCES: A SYSTEMATIC REVIEW OF THE LITERATURE 8
- Background 8
- Significance of the Study 10
- Methods 11
  - Inclusion Criteria 11
  - Search Strategy and Data Sources 13
  - Data Extraction 16
- Results 16
  - Search Results 16
  - Self-Concept 26
  - Influences on Career Decision Making 28
  - Ranking of Careers 29
- Discussion 33
  - Academic Giftedness Versus 'Social Talent' 34
  - Research Focus 34
  - Image of Nursing 35
- Recommendations 35
  - Study Populations 35
  - Image of Nursing 36
  - Recruitment of Students 37
- Limitations 38
- Conclusion 38
- References 40
  - Included Studies 42
  - Excluded Studies 42

CHAPTER 3: STUDY 2: LEADERSHIP STUDENTS: HOW WOULD YOU LIKE TO BE A NURSE? 45
- Background 45
- Literature Review 46
  - Leadership 46
  - Image of Nursing 47

Systematic Review 47
Purpose of Study 49
Methods 49
Study Format 49
Sample 50
Data Collection 50
Validity and Reliability 53
Ethical Considerations 54
Data Analysis 55
Results: Quantitative 55
Descriptive Data 55
Career Desirability 57
Nursing Encouragement 60
Results: Qualitative 61
Careers With Leadership Opportunities 62
Current Career Aspirations 63
Reasons for Choosing or not Choosing Nursing 64
Discussion 66
Limitations 68
Recommendations 69
Conclusion 71
References 73

APPENDIX A: CAREER INTEREST SURVEY 76

APPENDIX B: INFORMATION LETTER 79

APPENDIX C: CONSENT FORM 80

List of Tables

Table 1. Literature Search Strategies and Data Sources 14

Table 2. Characteristics of Included Studies: Quantitative and Qualitative 19

Table 3. Summary of Study Outcomes 32

Table 4. Characteristics of Respondents 57

Table 5. Means and Standard Deviation for Career Rankings by Leadership and Gender 59

Table 6. Means and Standard Deviation of Encouragement to Consider Nursing by Group and Gender 61

Table 7. Students' First and Second Most Often Indicated Career Choices 64

List of Figures

Figure 1. Screening Tool for Literature Search for Inclusion and Exclusion. 12

Figure 2. Search and Retrieval Process. 17

Figure 3. Mean Rankings of Career Desirability. 58

CHAPTER 1:

INTRODUCTION

Statement and Importance of the Problem

In conjunction with its 100th anniversary in 2008, the Canadian Nurses Association (CNA) released a document entitled *Toward 2020: Visions for Nursing* that outlines its vision of healthcare and nursing practice for the coming years. CNA's vision includes new and expanded roles for nurses and alternate healthcare delivery methods to meet the needs of Canadians. The CNA has advocated for nurses to assume roles with increased responsibility and changing leadership expectations, emphasized the need to break down barriers between nursing and other professions, and urged nurses to take "bold steps" (p. 4) towards a new future in healthcare. To meet this vision of nursing practice, it is imperative to attract nursing recruits who possess the skills and capacities necessary to function in the new roles that the association has envisioned. These recruits need to be leaders who are articulate, innovative, bold, and politically astute. This study examined students who were participating in a leadership-training program in high school to determine how appealing they found a variety of careers, what careers they were currently considering, the reasons that they would and would not consider nursing, and their perception of the encouragement they would receive to think about a career in nursing.

Leadership has been studied extensively in the past, and although there are differing theories on how leadership is developed, there is a general consensus on what it is. People who are good leaders are described as being able to articulate visions and bring them to reality, to take charge and facilitate change, and to encourage and inspire others

(Covey, 2004; Hibberd, Smith, & Wylie, 2006; Kouzes & Posner, 1995). The need for improved leadership has consistently been identified in studies that have examined the work life of nurses (Canadian Nurse Advisory Committee [CNAC], 2002; CNA, 2007; Lemire, 2001), and although the need for leadership development programs for current staff is recognized, it would be advantageous for the nursing profession to attract high school students who have already demonstrated leadership abilities. The first step in attracting these students is to understand their current career influences and aspirations.

There is a lack of research on the career perceptions of Canadian students of any caliber; let alone students who demonstrate leadership qualities. The majority of research on gifted students' career aspirations and influences has been conducted in the United States by researchers in the fields of education and psychology. There is no research that has examined leadership students' views of nursing. For this reason, it is important to examine the career aspirations of this unique group of high school students.

Additionally, in the past decade extensive media coverage in Canada has highlighted healthcare reform challenges, the poor work environments of nurses, and the escalating shortage of nurses and other healthcare providers. This coverage may have influenced students' perceptions and choice of nursing as a career.

The image of nursing is generally that it is a low-status, low-prestige, female-dominated profession (see, e.g., Al-Kandari & Lew, 2005; Cohen, Palumbo, Rambur, & Mongeon, 2004; Erickson, Holm, Chelminiak, & Ditomassi, 2005) that does not appeal to students with superior abilities. Those who influence the career decisions of high school students often overlook or completely miss the high levels of critical thinking,

leadership, and decision-making abilities required to be effective and successful in nursing.

Research Objectives

The purpose of this study was, first to understand the career aspirations and influences of gifted students in general and, second, to determine the views and aspirations of students who were participating in a leadership program for a career in nursing in comparison to other careers and whether these views differ from those of students who are not participating in leadership training. In undertaking this study, six objectives were identified: (a) to determine how students make decisions about careers; (b) to understand the influence of parents, peers, and other adults on students' career decisions; (c) to understand how being identified as 'gifted' impacts these students' career choices; (d) to explore differences in the career aspirations of students in and out of a leadership training program; (e) to determine which careers students think will offer leadership opportunities; and (f) to make recommendations on recruitment strategies to attract students with leadership abilities to nursing.

Design and Methods

This thesis is comprised of two independent studies. The first study, a systematic review, was conducted to discover what research has already revealed about the career perceptions and aspirations of gifted high school students. The systematic review focused on academically gifted students because there has been no research on students with leadership abilities. The second study is a report of a survey developed for the study, completed by high school students who were participating in a leadership training program, on their current career aspirations, their perceptions of leadership opportunities

in careers, their perceived encouragement to consider a career in nursing, and the reasons that they would and would not consider a career in nursing. These students' responses were compared with those of a control group of students who were not participating in the leadership training.

Study 1: Systematic Review of the Research Literature

The systematic review included peer-reviewed research studies published between January 1995 and the end of June 2007. Eight studies were found that met the requirements for inclusion in this study. The results of the systematic review of the career choices and influences of gifted high students (1,391, aged 11-25 years) revealed that gifted students choose careers that are consistent with their perceptions of their own abilities and the abilities required to succeed in any given profession. The students' perceptions of their own abilities were measured using personality scales, after which the students identified the personality attributes that they felt are necessary to succeed in a given profession. Although the students choose careers that matched their perceptions of their abilities and the abilities required in a profession, the majority indicated their desire for careers that are viewed as having high status and high prestige, and they are, in fact, strongly encouraged to pursue careers in science, math and engineering (SME).

Females expressed more willingness to consider careers that were either female or male dominated, whereas males were more likely to choose male-dominated careers. Studies in the review reported careers as female dominated if more than 70% of the workforce in that career was female and male dominated if less than 30% of the workforce in that career was female. Careers that have between 31% and 69% of women in the workforce were considered neutral.

Many of the studies looked at general types of careers (i.e., science) rather than specific careers, and the majority of students expressed an interest in high-status, high-prestige, and high-paying careers. The systematic review also revealed that mothers have the most influence on young people's career choices and that if mothers consider a career worthwhile, young people are more likely to consider that career. Mothers have the most influence on career decision making, followed by fathers, high school counselors, teachers, and peers, in that order. If their mothers, and to a lesser degree their fathers, value a specific career, the young people are more likely to consider pursuing that career.

Study 2: Data Analysis of Research Survey

The survey gathered quantitative and qualitative data. The quantitative data were analyzed using MANOVA to discover whether there were significant differences between the students who were participating in the leadership program and those not in the leadership program on their rankings of career desirability and encouragement to consider a career in nursing. The same statistical test was used to ascertain whether there were any significant differences between the genders in the group as a whole on the rankings of career desirability and encouragement to consider a nursing career. Content analysis was conducted on the qualitative data gathered from open-ended questions in the survey. Common threads or ideas were identified related to careers that the students perceived offer the most and the least leadership opportunities, careers the students were currently considering, and why they would or would not consider a career in nursing.

The data analysis was based on information from the survey that high school students who were and were not taking a leadership-training program completed. No significant differences were found between the two student groups on their rankings of

career desirability or the encouragement they felt they would receive to consider a career in nursing. Career desirability was then compared according to gender, and again, no significant differences were found. Content analysis revealed that the students most often reported that *teaching* and *business* are professions likely to offer leadership opportunities, whereas they identified sales and receptionist work most often as offering the fewest leadership opportunities. Only two students felt that nursing offers leadership opportunities, whereas three thought that it offers the fewest leadership opportunities. Engineering was the career most often considered, followed by medicine. Two of the 31 students who responded were considering nursing, and two students combined nursing with either medicine or physical therapy. The most common reason for considering nursing was the desire to help/care for people, and the most common reason for not considering a career in nursing was the unappealing work of nurses.

Significance of the Study Results for Nursing

Both studies affirmed that nursing is not an attractive and/or high-priority career choice. These results suggest that the nursing profession needs to address the image of nursing and consider gearing alternative recruitment strategies towards students who demonstrate leadership abilities. Based on the preliminary descriptive nature of this study and the general lack of research on high school students, leadership potential, and nursing there is a need for more robust research. Qualitative approaches would also yield more in-depth understanding of students' perceptions of nursing as a career choice.

Overview of the Thesis

Chapter 1 above included a summary of the thesis research and findings. Chapter 2 includes the first paper in the thesis—a systematic review of the career choices and

influences of gifted high school students. Chapter 3 presents the findings of a study on students' career ideas that involved students who were participating in a leadership-training program and a control group of their peers. The study format and data-collection methods are described, and information on the methods of data analysis follows. The findings from the analysis are then presented. The chapter concludes with the limitations of the study, as well as the implications and recommendations for nursing recruitment.

CHAPTER 2:

STUDY 1: GIFTED AND TALENTED STUDENTS' CAREER ASPIRATIONS AND INFLUENCES: A SYSTEMATIC REVIEW OF THE LITERATURE

Background

Nursing in Canada is facing a number of challenges that include, but are not limited to, (a) a worsening nursing shortage that is resulting in nurses' inability to meet the healthcare needs of Canadians, which has led to nursing recruitment/retention issues; (b) changing healthcare environments that require the innovation and creativity of workers in all sectors; (c) the increasing use of technology in healthcare settings; and (d) the shifting roles of all healthcare providers to improve costs and patient outcomes (Canadian Nursing Advisory Committee [CNAC], 2002). These challenges suggest that the nursing profession needs leaders who are articulate, innovative, bold, politically astute, and capable of finding solutions to these challenges.

Traditionally, the nursing profession was one of only a few careers considered acceptable for women, and it has relied on a steady stream of young women entering the profession to replace retiring nurses or those who are leaving the profession for other reasons. However, recent opportunities for young women to enter a wider variety of career fields, especially those traditionally dominated by men, has made nursing a less attractive choice, particularly for students who are bright, capable, and motivated. This is not to suggest that *all* students who are considering nursing are less capable; however, a review of the literature suggests that those students who are bright, capable, and

motivated (often classified as *gifted*) are, in fact, encouraged to pursue careers in SME because other careers are considered a waste of talent (Whatley, 1998; Wilgosh, 2001).

In the past decade several studies have examined the working environment of nurses and strategies for improvements. A consistent recommendation is that leadership be improved throughout nursing, from frontline to senior decision-making levels. For example, in its 2002 report, the CNAC identified the development of leadership in nursing as key to improving the work environments of nurses, and the American Nursing Association stated that leadership in nursing is so poor that immediate action is needed to remedy the situation (Lemire, 2001). The Academy of Canadian Executive Nurses has stressed that leadership needs to be infused into nursing at all levels to provide better care to patients and prevent crippling burnout among the current nursing workforce (Ferguson-Pare, Mitchell, Perkin, & Stevenson, 2002). Recently, the CNA (2007) distributed a document entitled *Nursing: The Future*, which describes future roles of nurses and stresses the need to "ensure nursing graduates are ready to assume leadership roles within the health system" (p. 7).

Leadership has been extensively studied, and many theories have emerged. Although much discussion has ensued on whether leadership is an innate quality or can be taught, the ideas of what constitutes good leadership are very similar. Kouzes and Posner (1995) defined a leader as someone who can articulate visions, embody values, and create an environment in which things can be accomplished. Other authors have described leadership as the ability to "take charge, make things happen, dream dreams and then translate them into reality" (Nanus, 1992, p. 10); as "communicating to people their worth and potential so clearly that they come to see it in themselves" (Covey, 2004,

p. 98); and as a process that involves people, gains their commitment, and energizes them to achieve mutual goals (Hibberd et al., 2006). Finally, Bennis (1994) characterized leadership as the capacity to translate vision into reality. Many gifted/talented students possess and demonstrate these qualities of leadership while still in high school, and they would be assets in improving the state of leadership in nursing.

Significance of the Study

Whereas the need to help current nurses build leadership skills has been recognized, and many programs have been developed toward this aim, it is also advantageous for the nursing profession to attract students who demonstrate leadership ability during their high school years. Although high school students' perceptions of nursing and other careers have been researched in the past (Cohen et al., 2004; Hemsley-Brown & Foskett, 1999; Tomey, Schwier, Marticke, & May, 1996), data are lacking on the career perceptions of Canadian students generally, let alone students who demonstrate leadership qualities. For this reason it is important to examine the career aspirations of this unique group of high school students. Additionally, in the past decade extensive media coverage in Canada has highlighted healthcare reform challenges, the poor work environments of nurses, and the escalating shortage of nurses and other healthcare providers. This coverage may have influenced students' perceptions and choice of nursing as a career.

No literature has been conducted to examine the career perceptions of students who demonstrate leadership attributes, but research has been done in the United States with students who are classified as gifted or talented. *Giftedness* and *talent* often refer only to superior academic achievements (see, e.g., Fiebig, 2003; Jacobs, Finken, Griffin,

& Wright, 1998; Lee, 1998), but they sometimes include elements of leadership (see, e.g., Battle & Grant, 1995; Lee, 2002; Mendez & Crawford, 2002). Therefore, because of the lack of research that specifically targets leadership students, a systematic review was conducted on literature that examined gifted/talented high school students and their career perceptions as a baseline to gain an understanding of this population. The purpose of this systematic review was to describe the findings from studies that examined the career aspirations and influences of students whom the school system formally identified as gifted.

Methods

Inclusion Criteria

The boards of education in the states or provinces where students reside identify them as gifted/talented, and this study accepted the local criteria for identifying these students. The first inclusion criterion was that the students had to be between the ages of 10 and 25. The inclusion criteria also specified that the study would determine the influences on students' career choices and address their career preferences. This included studies that named *specific* careers (such as physician, teacher, or engineer) as students' preference as well as studies that gave students the opportunity to state a preference for a *general* type of career. Third, only published research studies using qualitative and/or quantitative approaches were included. There was no restriction on study design, and only English-language articles were used in this review. Figure 1 illustrates the screening tool.

Career Decision Making by Gifted High School Students: A Systematic Review (2006)
Screening Tool for Inclusion/Exclusion

Title:
First Author:
Publication Date:
Journal:
Research: Quantitative Qualitative No Research

Does the study define 'gifted student'? If so, what is the definition?

Instructions for completion:
1. Circle Y or N for each criterion
2. Record inclusion decision: article must satisfy all three criteria
3. Record if additional references are to be retrieved

Inclusion/Exclusion Criteria:

1. Does the study examine students?	Y	N
2. Does the study discuss influences on career choices? What are the influences?	Y	N
3. Does the study discuss career preferences? What are the preferences?	Y	N

Include in study?	Y	N

Comments:

Figure 1. Screening tool for literature search for inclusion and exclusion.

Search Strategy and Data Sources

Data for this review were collected from 11 electronic databases, including CINAHL, ERIC, PsycINFO, MEDLINE, ABI, EMBASE, HealthSTAR, Academic Search Premier, Child Development & Adolescent Studies, ProQuest Education, and the Cochrane database. Included titles and abstracts were limited to those published between January 1995 and November 2006 because there have been significant changes in the work environments of all healthcare workers, more opportunities for students of both genders to enter careers that were previously considered unsuitable, and ongoing healthcare restructuring in the past 12 years. These factors would render earlier data on career aspirations and perceptions irrelevant. Manual searches of specific journals such as *Gifted Education*, *The Journal of Secondary Gifted Education*, and *High Abilities Studies* were also completed. Table 1 lists the search strategy and search terms.

Table 1

Literature Search Strategies and Data Sources

Database 1995-Nov. 2006	Search Terms	Number of titles & abstract
ABI Inform	Gifted high school students AND career selection (Subject) career planning (Subject) career perceptions (Subject) career preparation (Subject) career aspirations (Subject) career choice (Subject)	2
Academic Search Premier	Gifted high school students AND career selection (KW) career planning (KW) career perceptions (KW) career preparation (KW) career aspirations (KW) career choice (KW)	1
CINAHL (Limited to research)	Gifted high school students AND career selection (MP) career planning (MP) career perceptions (MP) career preparation (MP) career aspirations (MP) career choice (MP)	0
Cochrane Library (CDSR, ACP, Journal Club, DARE, CCTR)	Gifted high school students	0
EMBASE	Gifted High School Students AND career selection (MP) career planning (MP) career perceptions (MP) career preparation (MP) career aspirations (MP) career choice (MP)	2
ERIC	Gifted High School Students AND career selection (MP) career planning (MP) career perceptions (MP) career preparation (MP) career aspirations (MP) career choice (MP)	282

(table continues)

Database 1995-Nov. 2006	Search Terms	Number of titles & abstract
HealthSTAR/Ovid Healthstar	Gifted high school students AND career selection (MP) career planning (MP) career perceptions (MP) career preparation (MP) career aspirations (MP) career choice (MP)	9
Ovid MEDLINE	Gifted high school students AND career selection (MP) career planning (MP) career perceptions (MP) career preparation (MP) career aspirations (MP) career choice (MP)	9
PsychINFO	Gifted high school students AND career selection (MP) career planning (MP) career perceptions (MP) career preparation (MP) career aspirations (MP) career choice (MP)	254
Child Development & Adolescent Studies	Gifted high school students AND career selection (MP) career planning (MP) career perceptions (MP) career preparation (MP) career aspirations (MP) career choice (MP)	1
ProQuest Education	Gifted high school students AND career selection (MP) career planning (MP) career perceptions (MP) career preparation (MP) career aspirations (MP) career choice (MP)	2
Education-Wilson Education Abstracts	Gifted high school students AND career selection (MP) career planning (MP) career perceptions (MP) career preparation (MP) career aspirations (MP) career choice (MP)	2

(table continues)

Database 1995-Nov. 2006	Search Terms	Number of titles & abstract
Manual search		4
Titles and abstracts reviewed		568
Total minus duplicates		545
First selection of study reports		57
Final selection of study reports		8

Data Extraction

The following data were extracted from the eight remaining studies: author, journal, definition of *gifted/talented*, theoretical framework, research question/purpose, study design/methods, study participants/sample, instruments used/data coding and analysis, reliability/rigor and validity, significant and nonsignificant results, comments, and recommendations.

Results

Search Results

The results of the online and manual searches yielded a total of 568 titles and abstracts (Table 1). The first author reviewed all 568 titles and abstracts for adherence to inclusion criteria. After the review, 511 titles were found not to meet the inclusion criteria, and 23 duplicates were discarded. This resulted in 34 papers being retained for in-depth examination based on the inclusion criteria. To establish interrater reliability, a second reviewer evaluated a random sample of 100 articles' (from the original 568) titles and abstracts using the set criteria, which resulted in 100% agreement. The first author screened all 34 articles using the three inclusion criteria and excluded several because they were not research studies, but reports of programs developed to assist gifted students in making career decisions. Other papers were excluded because they were retrospective

studies of adults who looked back on their career preferences as students in the 1980s, and the rest were eliminated because they did not meet all three criteria. Eight papers formed the final group of studies included in this report (see Figure 2, the search and retrieval process).

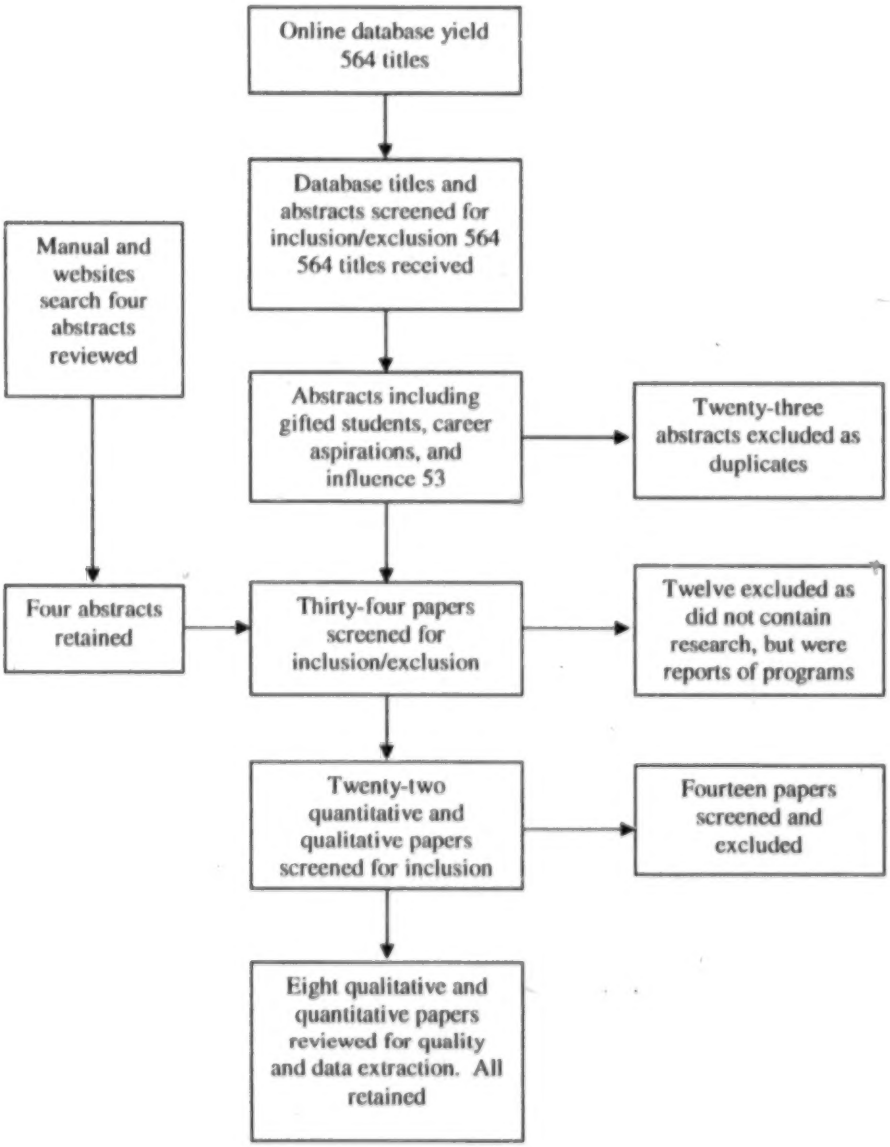
Online database yield 564 titles
Database titles and abstracts screened for inclusion/exclusion 564 564 titles received
Manual and websites search four abstracts reviewed
Abstracts including gifted students, career aspirations, and influence 53
Twenty-three abstracts excluded as duplicates
Four abstracts retained
Thirty-four papers screened for inclusion/exclusion
Twelve excluded as did not contain research, but were reports of programs
Twenty-two quantitative and qualitative papers screened for inclusion
Fourteen papers screened and excluded
Eight qualitative and quantitative papers reviewed for quality and data extraction. All retained

Figure 2. Search and retrieval process.

The final set of included studies and their characteristics is presented in Table 2. All eight studies, published between 1995 and 2005, were conducted in the USA. Three studies examined the career decision making of gifted girls in rural areas (Battle & Grant, 1995; Grant, 2000; Jacobs et al., 1998), and two studies (Lee, 1998; Mendez & Crawford, 2002) explored the effects of gender-role stereotyping on the career goals and aspirations of adolescent boys and girls. One qualitative investigation considered the effect of peers on the academic and creative talent development of one gifted adolescent male (Lee, 2002), and one study compared the career orientation of gifted American and German adolescent girls (Fiebig, 2003). The final study examined the views of gifted and talented adolescents on a variety of career options (Kher-Durlabhji & Lacina-Gifford, 1997). All included studies also examined career decision influences for the students (Table 2).

The 1,371 students in the eight studies ranged in age from 11 to 25 years. Their local boards of education had identified all of the students, who were mostly in elementary and junior high/middle school, as gifted through a variety of standardized testing means such as the American College Testing, the Standard Aptitude Tests, the SRA Achievement Series, Scales for Rating Behavior Characteristics of Students (Learning and Motivation Subscales only), The Torrance Test of Creativity, and IQ scores. The majority of these studies (Battle & Grant, 1995; Fiebig, 2003; Grant, 2000; Jacobs et al., 1998; Lee, 1998; Lee, 2002; Mendez & Crawford, 2002) did not mention specific careers in their data collection, but focused instead on the students' self-concept, their perceptions of attributes of people in certain career types, their interest in general types of careers, their attitudes toward the role of women in society, and their values and

Table 2

Characteristics of Included Studies: Quantitative and Qualitative

Quantitative studies

Author(s)/journal	Framework	Subjects	Instrument	Scoring	Reliability	Validity	Analysis
Fiebig J. N (2003) *High Ability Studies*	Rainey & Border (1997) Model of Mother-Daughter Relationships	37 American & 26 German girls age 11-14 identified as 'gifted' & their mothers.	*Inventory of Parent and Peer Attachment* – 25 items for each mother, father and peer subscale.	5-point Likert Scale	α =0.96 for American girls & 0.91 for German girls	Not Reported	Structural Equation Modeling (Path Analysis)
			Psychological Separation Inventory – 138 items.	5-point Likert scale	α =0.87 for American girls and 0.82 for German girls	Not Reported	As above
			Short Ben Sex-Role Inventory – 30 items.	7-point Likert scale	α =0.76 for American girls; 0.85 for American mothers; 0.91 for German girls and mothers	Not Reported	As above
							As above

(table continues)

Quantitative studies

Author(s)/journal	Framework	Subjects	Instrument	Scoring	Reliability	Validity	Analysis
			The Attitudes Towards Women Scale for Adolescents – 12 items	4-point Likert scale	α for Americans daughters=0.59 and mothers 0.76; α for German girls=0.73 and mothers 0.69	Not Reported	
			The Parent Nomination Form – use by mothers to assess their daughters' abilities.	Not reported		Not reported	
			Career Aspiration Scale – 10 items Occupational Checklist	5-point Likert scale	α for American girls=0.64 and German girls 0.73		
Jacobs. J. E., Finke, L. L., Griffin, N. L., & Wright, J. D. (1998) *American Educational Journal*	No framework	220 girls (9th-12th grade) in NSF-founded programming for rural girls talented in science	*Adolescent Questionnaire*	7-point response scale	Not reported	Not reported	Regression Analyses
			Mother Questionnaire	7-point response scale	Not reported	Not reported	

(table continues)

Quantitative studies

Author(s)/journal	Framework	Subjects	Instrument	Scoring	Reliability	Validity	Analysis
Kher-Durlabhji, N. & Lacina-Gifford, L. J. (1997) *The Journal of Secondary Gifted Education*	No framework	Four groups of students age 13-15. 113 in gifted programming 69 just missed qualifying for gifted programming 46 rated as creative 189 in a control group	Written questionnaire consisted of a list of professions students were asked to rank; two open-ended questions requesting information about 3 jobs students would most and least like to have; and scale rating which adults and peers would support their choice of teaching career	5-point Likert scale	Not reported	Not reported	
Lee, J. D. (1998) *Social Psychology Quarterly*	Structural Symbolic Interactionism on Self & Identity	433 students from 9th-12th grade participating in summer camp for gifted High School students to foster interest in SME	Participants rated themselves & others on a scale measuring semantic meanings of words that are opposite; asked to rank interest in becoming scientists & other careers; and a social encouragement scale to assess the effects of social support by adding the scores from 3 questions	7-point Likert scale	Not addressed Not reported	Not reported Not reported	

(table continues)

Quantitative studies

Author(s)/journal	Framework	Subjects	Instrument	Scoring	Reliability	Validity	Analysis
Mendez, L. M. R, & Crawford, K. M. (2002) *The Journal of Secondary Gifted Education*	Gottredson (1981) Theory of Circumscription & Compromise	227 students age 11-14 participating in gifted programming	*Parent Questionnaire* – 17 items	To determine child's socioeconomic status and whether mother's career was traditional			
			Revised Occupational Checklist (Brooks, Holahan & Galligan, 1985)	60 occupations, 20 female dominated (score= 1), 20 neutral (score= 2) and 20 male dominated (score= 3). Educational levels required for each occupation given a score of 1=high school dress or less; 2=at least a college degree; 2= requiring at least a graduate degree.	Two-week, test-retest reliability by item agreement 85%	Not reported	MANOVA

(table continues)

Quantitative studies

Author(s)/journal	Framework	Subjects	Instrument	Scoring	Reliability	Validity	Analysis
			Duncan Revised Socioeconomic Index of Occupational Status.	Prestige score calculated in same manner as educational levels 4-point Likert scale			
			Personal Attributes Questionnaire (Spence & Helmreich , 1978) – 8 items in each realm of masculinity, femininity and masculinity/ femininity.		α=0.85 for masculinity scale; 0.82 for femininity scale; and 0.78 M-F scale	Not reported	
			Attitudes Toward Women Scale for Adolescents – 12 items.	4-point Likert	α=0.72 for girls and 0.78 for boys		
			Work & Family Orientation Questionnaire	4 categories measured—work, mastery, competition and personal unconcern. Higher scores indicate higher achievement motivation	α for work, master & competitiveness range from low 0.60 to mid .070. A revised scale for personal unconcern α=0.83.	Not reported	

(table continues)

Quantitative studies

Author(s)/journal	Framework	Subjects	Instrument	Scoring	Reliability	Validity	Analysis

Qualitative studies

Author(s)/journal	Framework	Subjects	Data collection	Rigor	Analysis
Battle, D. A., & Grant, D.F. (1995) *Roeper Review*	Study of adolescence & giftedness	3 gifted females age 18-19 from rural US	Case study	In-depth engagement with subjects over time 'Member checks' with participants	Data classified Content analysis for relevant themes
Grant D. F. (2000) *Roeper Review*	Theories associated with developmental career theories, gender role expectations and giftedness	7 gifted females age 18-25 from rural US	Questionnaire on demographics In-depth structured interviews	Used multiple researchers, multiple data sources and the use of structured interviews and questionnaires.	Consistent themes to identify influences, patterns & trends over time
Lee, S. (2002) *The Journal of Secondary Gifted Education*	No framework	One gifted male age 12.	Semistructured interviews Observations Review of documents	Multiple contacts with subject in varied settings	The constant comparative method, consisting of three levels of coding, was used to analyze the data

role expectations regarding marriage and family. The careers were classified as traditional versus nontraditional careers for women, science and mathematics careers, and health science or physical science careers. Three studies (Battle & Grant, 1995; Grant, 2000; Lee, 1998) briefly mentioned students' plans for specific career choices or college majors, and in only one study (Kher-Durlabhji & Lacina-Gifford, 1997) the students actually rated career desirability.

The data collection occurred in a variety of settings including the students' schools and homes, summer camps geared toward gifted students that universities offered, and the colleges and/or universities that the older students were attending. Three studies examined the career aspirations and influence of both genders (Kher-Durlabhji & Lacina-Gifford, 1997; Lee, 1998; Mendez & Crawford, 2002), and three studies focused on girls only, two of which focused on girls in rural areas (Fiebig, 2003; Grant, 2000; Jacobs et al., 1998). The final study focused on one male student (Lee, 2002). Although the majority of studies provided information about the students only, three studies also provided information about the educational levels and career achievements of the students' parents (Battle & Grant, 1995; Fiebig, 2003; Mendez & Crawford, 2002).

The authors of these eight studies used a variety of theories on career development, adolescents, and giftedness to guide their work. Mendez and Crawford (2002) utilized Gottfredson's (1981) theory of circumscription and compromise, which states that by the time students reach early adolescence, they have ruled out a number of occupations that they believe are inconsistent with their gender role, social class, and/or intellectual abilities (p. 97). Fiebig (2003) used Rainey and Borders' 1997 theory on how the mother-daughter relationship will affect career orientation and career aspirations

among early adolescent rural females (p. 166). Lee (1998) based his study on three theories: (a) Stryker and Serpe's (1982) theory of structural symbolic interactionism on self and identity, which states that people make behavioral choices consistent with salient identities that are formed through interactions with others (p. 201); (b) Burke's identity control theory; and (c) Heise's affect control theory. These theories employ cognitive and affective dimensions of meaning (p. 201). Grant's (2000) qualitative study was grounded in theories and research associated with developmental career theories, gender-role expectations, and giftedness. He used primarily the work of Zunker (1998), who viewed career development as a lifelong process that occurs in stages that include career maturity and the development of self-concept. He also incorporated Super's (1990) theory that purports that career-related decisions result from an ongoing learning process that includes the interaction of multiple influences across the lifespan (p. 252). Battle and Grant (1995) stated simply that their study had a theoretical framework that evolved from research on both adolescents and giftedness (p. 33). The other authors (Jacobs et al., 1998; Kher-Durlabhji & Lacina-Gifford, 1997; Lee, 2002) did not report using a theoretical framework.

The data collected from these eight research studies cover a range of topics related to the career choices of gifted students, including their self-concept and perceptions of attributes of people in certain careers, the influences on career decision making, and the actual ranking of desired careers. Each of these topics is discussed below.

Self-Concept

Students' self-concept was the main area for examination in the studies included in this systematic review. The results indicate that students' self-concept is related to their

career aspirations, and one of the greatest determinants of self-concept is gender. One study (Lee, 1998) reported that students are most likely to choose disciplines in which their perceptions of the personality attributes of people in that discipline are most similar to their own self-concepts and that students' identity acquisition tends to narrow their educational choices, which results in fewer career opportunities. Lee identified a gap between girls' and boys' self-concepts and their perceptions of the characteristics of people in the SME disciplines. Both boys and girls reported that individuals in these disciplines have strong masculine traits such as competitiveness, independence, and object orientation. However, girls perceived that they *themselves* have more feminine traits such as cooperativeness, other orientation, and emotions rather than the masculine traits prominent in SME careers. In these studies the girls were less likely to express an interest in SME careers than boys. Mendez and Crawford's (2002) findings substantiated this viewpoint in their study in which students completed several scales that measure personality attributes, attitudes toward women, and work and family orientation. Girls were found to be more liberal in their attitudes toward the rights and roles of women in society and were more likely to consider a wider range of traditional, nontraditional, and neutral careers than were boys. On the other hand, boys in gifted programs identified more with other science students than with other males and tended to choose mainly male-dominated careers that were more likely to require higher levels of education, were ranked higher on the prestige scale, and earned higher incomes. Boys chose careers that reinforced their own self-concept of being masculine and scientific, while girls were more likely to choose careers that matched their interests and personalities regardless of whether those careers were neutral or male or female dominated. Girls who believed that

they possessed more masculine personality traits were more likely to choose male-dominated career paths. However, despite this apparent belief that they could choose any careers they wanted, the girls believed that they had more in common with other girls than with other science students and still tended to indicate more interest in careers that allow them to express their feminine qualities. Mendez and Crawford also found that girls were more likely than were boys to rate family orientation and the ability to combine family and work life as important in choosing a career. To a lesser degree other studies in this review also looked at the role of self-concept with regard to career aspirations and demonstrated the same results (Battle & Grant, 1995; Fiebig, 2003; Grant, 2000; Jacobs et al., 1998).

Influences on Career Decision Making

Influences on the career decision making of gifted students are tied closely to the students' self-concept and perceptions of the characteristics required to compete and be successful in a career. Two studies examined the role of mothers in shaping the self-concept of gifted girls and found that the mothers had a significant impact on how the girls perceived their own abilities and on what constitutes an appropriate career. Jacobs et al. (1998) found that mothers' attitudes toward women in science were the most significant factor in whether their daughters would consider a science career regardless of the girls' science GPA, extracurricular activities, or peer support. The mothers had a great influence on the career choices of their daughters because they transmitted their belief that their daughters have the talent and ability required to take on a science career.

In her study of American and German gifted females, Fiebig (2003) found that mothers' views on traditional versus nontraditional careers and their opinions of their

daughters' scientific talents were strong indicators of the type of career that their daughters would consider. The mothers' attitudes also influenced whether their daughters aspired to achieve levels of leadership in their chosen career.

Further to these studies on the effects of mothers on daughters, in the remaining studies in this review the students indicated that family support for a given career was the primary factor in their consideration of a variety of occupations (Battle & Grant, 1995; Fiebig, 2003; Grant, 2000; Jacobs et al., 1998; Kher-Durlabhji & Lacina-Gifford, 1997; Lee, 2002). This does not necessarily mean that these adolescents would choose careers that were similar to those of their parents, but rather that they would they choose careers that their parents and families felt were appropriate, achievable, and of value to society. Other influences on career decision making include teachers, principals and school counselors (Grant, 2000; Kher-Durlabhji & Lacina-Gifford, 1997); involvement in a variety of extracurricular activities, including (but not limited to) science clubs, church, babysitting, 4H clubs, language studies, cultural studies and sports (Battle & Grant, 1995; Jacobs et al., 1998; Lee, 2002), and, to a much lesser degree, peers (Jacobs et al., 1998; Kher-Durlabhji & Lacina-Gifford, 1997; Lee, 2002).

Ranking of Careers

Some researchers asked students to report their preferences for a general type of career, whereas others asked students to report a preferred field of study or to actually rank specific careers in order of preference. The studies that looked at general types of careers divided the occupations into male dominated, neutral, and female dominated. These studies classified female-dominated careers as having 70% or more females in the workplace, neutral careers as having 30%-69% female workers, and male-dominated

careers as having fewer than 30% female workers (these percentages were based on data from the US Bureau of the Census). Jacobs et al. (1998) and Lee (1998) reported that when the gifted girls in their studies indicated a preference for male-dominated professions, they usually chose professions that would still allow them to act upon their feminine qualities. In considering science careers, girls were much more likely to choose health-science professions than physical-science professions. Gifted girls sought general truths about life and preferred careers orientated toward 'others,' whereas gifted boys looked for practical answers and wanted careers orientated toward 'things' (Jacobs et al., 1998; Lee, 1998). For example, whereas medicine and law were once considered male-dominated professions, they were also classified as helping professions in which girls could feel that they were contributing to society and helping the less fortunate. Thus, more girls preferred medicine and law as career options and were beginning to outnumber men in these professions. Boys continued to gravitate towards engineering and mathematics, which are still very much male-dominated professions, because these careers deal with concrete facts and machines (Jacobs et al., 1998; Lee, 1998).

The findings of the studies on general career types were in keeping with the findings of the studies in which students were asked to indicate a study major or rank career desirability. Grant (2000) conducted a qualitative study with seven gifted rural females to determine the influences on their precollege and career-related decisions. These girls were asked to indicate career preferences as they entered postsecondary education. Their career aspirations included medical doctor (three girls), politician, retail entrepreneur, elementary teacher, and biomedical engineer. In their qualitative study Battle and Grant (1995) also found that the three gifted girls aspired to be a medical

doctor, a teacher, and a genetics engineer. The girls in both studies wanted to make a difference in the lives of others and to better society. The one qualitative study that examined the career aspirations of a gifted male used a participant/observer approach and was less conclusive in determining a specific career path. The male in this study indicated a desire to become a rock star, a career that could be considered neutral (Lee, 2002).

Only one study asked students to rank careers in order of preference. Kher-Durlabhji and Lacina-Gifford (1997) conducted a survey of gifted and talented students in junior high school and divided them into four groups that consisted of *academically gifted* (group 1), *smart*—students who just missed the cutoff for gifted programming (group 2), *creatively gifted* (group 3), and a control group of regular junior high and high school students (group 4). The authors gave the students a list of common careers and asked them to rank them. All three groups of gifted/smart students rated physician or scientist as their first choice, and the control group of regular students chose lawyer. The second choice for the two academic groups was lawyer, whereas the creative group ranked actor or artist as their second choice, and the control group ranked physician as their second choice. Other rankings for the academically gifted students (group 1) included accountant (4), banker and manager (5), nurse and actor (10), and artist, salesperson; and teacher (11). After their first two choices, the smart students (group 2) ranked the rest of the careers as follows: manager (4), actor (6), artist (7), banker (8), nurse (9), salesperson and teacher (11). The creative students (group 3) chose lawyer (5), nurse (7), manager (8), accountant (9), and banker, salesperson, and teacher (11). Finally, the students in the control group (4) rounded out their list with actor (3), nurse (4), banker (5), manager (6), accountant (7), scientist (8), artist (9), salesperson (10), and teacher

(11). These results are similar to those of the other studies in the systematic review in that these gifted/talented students chose careers that are generally considered high status and high prestige in society. Table 3 summarizes the studies' outcomes.

Table 3

Summary of Study Outcomes

Influences	Source	Relationship	Career choices
Self-concept/ identity & perceptions of attributes needed in general career types	Lee (1998)	Discrepancies between self concept/identify & perception of attributes needed for career significantly impact career choice	Girls—physician, biologist & psychologist Boys—engineer, physicist & mathematician
	Mendez & Crawford (2002)	Girls—Moderate positive correlation between career choices & personal attributes (masculine scale) as well as work & family orientation	Girls chose significantly career choices—female, neutral and male dominated
		Boys—Moderate negative correlation between career choice and personal attributes (feminine scale)	Boys chose male dominated careers significant number of times
	Jacobs et al. (1998)	Girls' interest in biology significantly related to career in health sciences Lower science GPA significantly related to interest in human services career	Girls more likely to choose health science career rather than physical science career
		Participation in science activities & science GPA significantly related to physical science career	
Family—particularly mothers	Fiebig (2003)	Mother-daughter relationship significantly influences career orientation & aspiration	Not specified
		Mothers' gender role attitudes significantly affect daughters' career orientation & aspiration	

(table continues)

Influences	Source	Relationship	Career choices
	Jacobs et al. (1998)	Mothers' attitude toward value of science significant toward choosing any science career & choosing health science career	Girls more likely to choose health science career
	Kher-Durlabhji & Lacina-Gifford (1997)	Parents strongly encourage career in teaching	Physician/scientist/lawyer #1 or 2 & teacher as #11 of 11 choices
	Battle & Grant (1995)	Girls rate family as #1 influence in career decision making	Medicine, teaching, genetic engineer
	Grant (2000)	Girls rate family as #1 influence in career decision making	Medicine, politician, genetic engineer, teacher (2), psychiatrist, entrepreneur
Other adults (teachers & counselors); peers	Lee (2002)	Male subject states peers helpful in choosing career	Rock star
	Kher-Durlabhji & Lacina-Gifford (1997)	Teachers, counselors, principles likely to offer encouragement to consider teaching; peers unlikely to offer encouragement	Physician/scientist/lawyer #1 or 2 & teacher as #11 of 11 choices

Discussion

Students' career choices are most often tied to their own self-concept and their perceptions of the personality traits required for general career types. Influences on career choice include parents, particularly mothers; teachers; principals; and peers. This review reveals that these gifted students generally aspire to careers that they and society consider prestigious. Because of the nature of available research on gifted and talented students and the lack of research that specifically targets students with leadership ability, the following discussion examines how these two may be different. The discussion also addresses the focus of current research on gifted girls and the perceived need to

encourage them to consider careers in SME and concludes with a discussion on the image of nursing and how it may explain the findings of the systematic review.

Academic Giftedness Versus 'Social Talent'

The majority of the studies in this review examined academically gifted students. Although students can be gifted and/or talented in areas other than academics, little to no research has been conducted on students outside the academic realm. For example, students who might not achieve the high standards set for entrance into official academic programming may possess other important skills such as leadership, communication, organization, or critical thinking. However, it is difficult to find this separation between academic giftedness and social talent in the literature. Generally, students who are academically gifted are assumed to also demonstrate these other talents; and in many cases they do, but not always. This is a shortcoming in this area of research.

Research Focus

Much of the literature on gifted students and careers has focused on encouraging these students, particularly girls, to choose careers in the SME fields. Because these fields are traditionally male dominated, a large amount of the research has centered on girls and why they do or do not choose careers in them. It seems a foregone conclusion that gifted students should pursue careers in SME and that any other career choice is not sufficiently challenging (Whatley, 1998; Wilgosh, 2001). This is particularly true if girls indicate an interest in a profession that is traditionally female dominated. It is unfortunate that female-dominated professions tend to be rated as low status, low prestige, and low pay or are viewed as holding these female students back from achieving their full potential.

Little consideration seems to be given to the girls' own stated preference for a balance between work life and personal life and the need to follow their own self-identify.

Image of Nursing

Nursing is viewed as a female-dominated profession, which often means that it is not considered a suitable career for gifted students of either gender. In some of the research studies included in this review, the discussion focused on students who are choosing health-science rather than physical-science careers. However, no explanation was given for what constitutes a health-science or a physical-science career. Therefore, it is possible that nursing can be included in the health-science career category in which students are indicating an interest. A more explicit description of these science careers would make it easier to determine whether these students might, in fact, consider nursing as a career option.

Recommendations

To further advance the knowledge of gifted/talented students'—and particularly leadership students'—career aspirations, the influences, and the perceptions of the nursing profession, several recommendations are proposed.

Study Populations

As noted, the majority of literature on gifted students focused on students who demonstrate strong academic skills. It is important to expand the understanding of how students who demonstrate other talents, either in conjunction with or separate from academics, are making decisions about careers and which occupations are attractive to them. Having a strong academic background does not necessarily mean that a person will be an effective leader, a clear communicator, or a skilful negotiator. However, these are

necessary skills for nurses to possess to achieve the quality and scope of nursing practice that nursing leaders envision and to improve the work environments of nurses (Baumann et al., 2001; CNA, 2007; Patrick & White, 2005). More research needs to be conducted with students who have demonstrated, or are learning, skills such as leadership, as well as with Canadian students to help build their knowledge of nursing as a career choice in Canada. Because little information is available about this cohort of students in Canada, sound quantitative and qualitative studies are needed to offer an encompassing view of these students.

Image of Nursing

A common theme throughout this literature review was the classification of careers as female dominated, neutral, or male dominated. The researchers utilized well-known scales to rank careers as high or low status, high or low paying, and high or low prestige. Female-dominated professions, including nursing, are categorized as low status, low paying, and low prestige. It has been well documented that nursing suffers from an image problem (see, e.g., Al-Kandari & Lew, 2005; Cohen et al., 2004; Erickson et al., 2005), and people who have been shown to influence students in their career choices generally do not understand the work that nurses do (Blasdell & Hudgins-Brewer, 1999; Mignor, Cadenhead, & McKee, 2002). They do not recognize the level of critical thinking, leadership, and decision-making ability required to be effective and successful in the nursing profession. The students in the studies in this review, as well as students talented in other areas, may possess the attributes required to make them excellent nurses. It is incumbent on national and provincial nursing associations across Canada to make it a priority to improve the image of nursing, particularly with this special group of high

school students. These students, their parents, and their high school advisors need to learn about the wide range of career opportunities available to nurses and the potential for leadership positions throughout the healthcare system. If nursing is successful in attracting this type of student, it may in turn improve the status and prestige of the nursing profession. This will then make the profession more attractive to these students.

Recruitment of Students

Many faculties in colleges and universities actively recruit students whom they would like to see attend their institution. Faculties of nursing need to follow this trend to attract students who demonstrate personal and intellectual abilities that will enhance the profession (Tomey et al., 1996). A report that the CNA commissioned revealed that most nursing education programs in Canada turn away hundreds of applicants each year due to classroom quotas (Paul, Day, Boman, McBride, & Idriss, 2005), and representatives from two of the largest nursing programs in Alberta confirmed that this is true (S. Bookhalter, personal communication, April 24, 2007; P. Paul, personal communication, Feb 21, 2006). This suggests that recruitment into nursing is not a problem. However, currently, schools of nursing choose applicants from those who apply rather than targeting their recruitment towards specific gifted and talented students. Faculties need to work with high schools across Canada to identify students who have demonstrated superior abilities and present these students with incentives such as scholarships, mentoring, and relocation assistance. These students could be invited to special information receptions where they will have the opportunity to meet with nursing leaders, frontline nurses, faculty, and employers to increase their knowledge of and appreciation for the nursing profession. This strategy may yield surprisingly effective results.

Limitations

This review has two limitations. First, although these studies include information on how students view careers generally, little data are available on their specific career goals and aspirations. Therefore, it is difficult to determine how students rate the desirability of specific careers. It is also challenging to ascertain what students know about the realities of working in specific careers. Second, a reporting bias may exist as only published studies in English were included in this review, and all of these studies were conducted in the United States. It may be that other countries do not classify their gifted students in the same manner as the United States does and/or do not provide such extensive programming for these students. This may be the reason that no studies were found from other countries and might explain the difficulty of conducting research on these students in other countries. However, gifted and talented students in other countries may have different self-concepts from those of their American counterparts or may feel freer to choose a variety of types of careers.

Conclusion

Research on the career aspirations and influences of gifted and talented students has focused on the areas of education and psychology and has generally looked at the need to increase the participation of these students in the SME fields. All reviewed studies, with the exception of one that also included a cohort of German students, were conducted with American students, which makes it difficult to determine whether students in other countries have the same ideas about career desirability and opportunities. Students' career choices are most often tied to their own self-concept and their perceptions of the personality traits required for general career types. Influences on

career choice include parents, particularly mothers; teachers; principals; and peers. Gifted girls tend to be more flexible in their career choices, whereas gifted boys indicate an interest in male-dominated professions that require higher education and carry greater social prestige. Similar studies need to be done with students who display a variety of gifted attributes other than academics. The image of the nursing profession needs attention, and schools of nursing would benefit from targeting recruitment strategies to specific gifted and talented students across Canada.

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CHAPTER 3:

STUDY 2: LEADERSHIP STUDENTS:

HOW WOULD YOU LIKE TO BE A NURSE?

Background

In conjunction with its 100th anniversary in 2008, the Canadian Nurses Association (CNA) released a document entitled *Toward 2020: Visions for Nursing* that outlines its vision of healthcare and nursing practice in the coming years. CNA's vision includes areas such as new and expanded roles of nurses and alternate healthcare delivery methods to meet the needs of Canadians. This document comes at a time when there is a critical need across Canada for more nurses. Headlines such as "Where Will Hospitals Find Nurses?" (Bennett, 2007), "Nursing Crisis Costly" (Wilcox, 2008), and "Nurse Shortage Blamed for Surgery Delays" (MacKay, 2008) are becoming increasingly common. Although these headlines point to the need for more nurses in the system, CNA's (2008) vision contains an image of a very different healthcare system, with nurses practicing in very different ways than they currently practice. *Toward 2020: Visions for Nursing* advocates for nurses to work as "health shepherds . . . with . . . increased responsibility . . . and . . . changing leadership expectations" (p. 3). This document also emphasizes the need to "break down divisions within nursing and barriers between it and other professions" (p. 4) and urges nurses to take "bold steps" (p. 4) towards a new future in healthcare. The CNA quoted Sister Elizabeth Davies, Chair of the Canadian Health Services Research Foundation:

> We're in a new place; we're not on the edge of an old place. We're not pushing the envelope; we're in a totally new envelope. So, the rules have changed. Every fundamental premise of the old way of thinking no longer applies (p. 4).

From the CNA's (2008) vision, it can be assumed that although it is important to make an effort to address the nursing shortage in the short term, it is also vital to look to the future and understand what types of students are considering nursing and whether those students have the skills and capacity necessary to function in the new roles that the governing body has envisioned. These new roles will require a leader—someone who is articulate, innovative, bold, and politically astute. Students who participate in leadership training courses while in high school may demonstrate these qualities. However, little is known about the career aspirations of these students. To date no research has been conducted on the career goals of students who are participating in leadership training and on their views of any careers, let alone nursing, or who might influence these students' career decisions. This paper is a report of a research project that sought answers to the question, What are the career perceptions and career influences of a group of high school students in Western Canada who are participating in a leadership-training course?

Literature Review

Leadership

Research into the work environments of nurses in the past decade has consistently pointed to the need for improved leadership at all levels of nursing. Both the Canadian Nurse Advisory Committee (2002) and the American Nursing Association (Lemire, 2001) stated that the development of leadership is key to improving the work life of nurses. The Association of Canadian Executive Nurses has agreed that leadership needs to be infused into nursing at all levels to provide better care to patients and prevent crippling burnout among the current nursing workforce (Ferguson-Pare, Mitchell, Perkin, & Stevenson, 2002). The CNA (2007) distributed a document entitled *Nursing: The*

Future in which it stressed the need to "ensure [that] nursing graduates are ready to assume leadership roles within the health system" (p. 7). Therefore, what exactly is leadership? Although there are numerous theories on how leadership is developed, the ideas of what constitutes good leadership are very similar. Leadership has been characterized as the ability to articulate visions and translate them into reality (Bennis, 1994; Kouzes & Posner, 1995), to take charge and make things happen (Nanus, 1992), to energize people to achieve mutual goals (Hibberd, Smith, & Wylie, 2006), and to communicate people's worth (Covey, 2004). These attributes of leadership would certainly help the nursing profession to achieve its goals of an expanded scope of practice, with increased responsibility and leadership.

Image of Nursing

A review of the literature revealed that nursing suffers from an image problem in that it is generally viewed as a low-status, low-prestige, female-dominated profession (see, e.g., Al-Kandari & Lew, 2005; Cohen, Palumbo, Rambur, & Mongeon, 2004; Erickson, Holm, Chelminiak, & Ditomassi, 2005). A recent report in *Money* magazine listed registered nursing as one of the top 50 best jobs in America, ranking nursing above average for job growth and salary, but below average in the categories of creativity, difficulty, flexibility, and stress (Kalwarski, Mosher, Paskin, & Roato, 2006). Because the work of nurses in both countries is similar, it is likely that nursing in Canada would receive similar ratings.

Systematic Review

A systematic review of the career choices and influences of gifted/talented high school students showed that these students choose careers that are consistent with their

perceptions of their own abilities and the abilities required to succeed in any given profession (Miller & Cummings, in review). However, the majority of these students would not consider a low-status, low-prestige career such as nursing appealing and are, in fact, strongly encouraged to pursue careers in science, math, or engineering (SME) because other careers are considered a waste of talent (Whatley, 1998; Wilgosh, 2001).

The systematic review also revealed that mothers have the most influence on young people's—particularly females'—career choices, followed by other family members, school counselors, teachers, and peers (Miller & Cummings, in review). If mothers, and, to a lesser degree, fathers, consider a career to be of worth, young people are more likely to choose that career (Miller & Cummings, in review). It is important to note that these studies examined academically gifted students rather than students who demonstrated social giftedness such as leadership, communication, or critical thinking. It is difficult to find a separation between academic giftedness and social talent in the literature. Generally, students who are academically gifted are assumed to also demonstrate these other talents; and in many cases they do, but not always.

Additional literature indicated that other individuals such as school counselors and teachers who influence students (either gifted or not) in their career choices generally do not understand the work that nurses do (Blasdell & Hudgins-Brewer, 1999; Mignor, Cadenhead, & McKee, 2002). They often do not recognize the level of critical thinking, leadership, and decision-making ability required to be effective and successful in the nursing profession as it is currently practiced, let alone in the expanded roles that the CNA (2008) envisions.

Purpose of Study

The purpose of this research was to examine the career choices, influences, and the perceived leadership opportunities in various careers among students who were participating in a leadership-training program at a local high school. Specifically, the questions that were asked included the following:

1. Do students in a leadership-training program have different career aspirations from those of students who are not participating in the program?
2. What careers do students (either in or out of the leadership program) perceive as offering the most leadership opportunities?
3. What careers are these students currently considering?
4. Which adults in the students' lives are most likely to encourage a career in nursing?

It is probable that gifted/talented young people in Alberta have similar views and perceptions of a career in nursing to those of the students in the literature reviewed. That is, the majority of students with leadership abilities in Alberta have a low opinion of nursing, and most would not consider it as a career immediately after high school. The information gathered from this study can be used to develop ideas to address students' misconceptions about nursing and enhance recruitment strategies to encourage students with exceptional abilities to consider nursing as a viable career choice.

Methods

Study Format

Because there is little research on what Canadian students with leadership attributes think about a career in nursing, this study is a level 1 descriptive/exploratory

study with both quantitative and qualitative aspects. LoBiondo-Wood and Haber (2005) stated that descriptive/exploratory studies can be used to "search for accurate information about the characteristics of particular subjects, . . . particularly when little is known" (p. 268) about the study area. In this level 1 study, it was suitable to use a questionnaire (Brink & Wood, 2001) to determine what careers appealed to this group of students and who in the students' lives would be most likely to encourage a career in nursing. For the purpose of this study, *students* is defined as young people registered in Grades 10-12 for the school year 2007-2008. The *leadership in training* program is defined as a structured course offered for high school credit in which students are taught principles of leadership and are expected to practice these principles in various activities in which they are involved.

Sample

The population of this study was high school students in Alberta; the sample was drawn from a large high school and consisted of 150 students from the leadership program and a control group of approximately 150 students who were not enrolled in the leadership program. Although targeting a specific high school in this manner rather than randomly choosing a school from the many available can be considered a weakness of the study, this strategy was chosen because the leadership program at this particular high school is well developed, and the teachers and students in the program have been involved in many worldwide leadership conferences and activities.

Data Collection

Questionnaires are used to gather facts on subject areas, events, or situations known by the participants and to elicit their beliefs, attitudes, opinions, levels of

knowledge, and/or intentions (Brink & Wood, 2001; Burns & Grove, 2001). This study used a questionnaire (see Appendix A) developed by the researchers. In 1997 Kher-Durlabhji and Lacina-Gifford conducted a study with gifted high school students on their views of a career in teaching. They asked students (gifted and nongifted) aged 13-15 (a) to rank a number of careers in order of preference, (b) to indicate the most and least desired careers, and (c) to list the significant adults who were most likely to encourage a career in teaching. This study stimulated the author to consider how gifted students rank a career in nursing. In Kher-Durlabhji and Lacina-Gifford's study, the participants ranked nursing low on the scale of appealing careers, and only teaching, sales, and management ranked lower. Therefore, the survey in this study was based on Kher-Durlabhji and Lacina-Gifford's survey.

The first part of the questionnaire gathered biographical information about the participants and included questions about gender, age, grade, educational program type (i.e., leadership course, international baccalaureate, or regular), and club membership. Students were then asked to respond to two open-ended questions: "Name three careers you think offer the most opportunities for leadership" and "Name three careers you think offer the least opportunities for leadership." The next section of the questionnaire provided the students with a list of current careers that were easily recognizable to them; they included careers that are considered female dominated, male dominated, and neutral and of low, medium, and high prestige, and that require varying amounts of postsecondary education. This list was developed through consultation with career counselors at the participating high school, as well as from research on career distribution and future projections of needed careers in this province. The students were asked to rank

each career on a Likert scale as *not appealing at all*, *somewhat unappealing*, *somewhat appealing*, and *very appealing*. They were not given the option of a *neutral* response, which would elicit little useful data on how appealing each career was to them (Burns & Grove, 2001). The students were then asked to indicate their first and second choices of careers that they were currently considering. If nursing was one of them, they were asked why they chose it; and if nursing was not one of the careers that they chose, they were asked for the reason. Finally, if the students considered nursing as a career option, they were asked to rank the encouragement that they expected/anticipated from a variety of people in their lives, including friends, mothers, fathers, teachers, and school counselors, whom the literature identified as having the most influence on career decision making (Fiebig, 2003; Grant, 2000). The students ranked the encouragement on a Likert scale from 1 (*not encouraging at all*) to 5 (*very encouraging*). This question gave them the option of a *neutral* category because the individuals might not care whether the students considered nursing as a career option. In this case the neutral category provided useful data on the influences in these students' lives.

One teacher in the leadership program agreed to work closely with the researcher and compiled a list of students who were registered in the leadership program, as well as a control group of students who were not enrolled in the program. The contact teacher provided each group of students with a package containing an information letter (see Appendix B) that detailed the purpose of the study, two consent forms (see Appendix C), the survey, and a stamped, addressed envelope to take home to their parents. The letter explained to the parents that the students should complete the survey on their own without parental input and that it should take approximately 30-60 minutes to complete.

The parents were asked to sign one copy of the consent form once the students had completed the survey; to place the consent and the completed survey into the included self-addressed, stamped envelope; and to send it to the researcher at the Faculty of Nursing, University of Alberta, c/o Dr. Greta Cummings. The research staff then separated the consent forms from the completed surveys so that only the researcher had access to the anonymous surveys for analysis. Because Freedom of Information and Personal Protection regulations in Alberta prohibited the teacher from giving the researcher any contact information for follow-up, the complete packages were sent home with the students three times at two-week intervals in an attempt to boost the return rate. Dillman (2000) recommended multiple mailouts for this type of research procedure because participants often need reminders to complete the survey.

Validity and Reliability

Validity and reliability are two important aspects when conducting research. According to Brink and Wood (2001), level 1, exploratory descriptive studies generally have a low level of validity and must rely heavily on estimates of reliability. Validity of a data collection tool indicates that the tool actually measures what the researcher intended to measure. To achieve validity for this study, the researcher consulted with the thesis committee as a panel of judges for feedback on the tool development, and changes were made to the tool as recommended.

Brink and Wood (2001) defined *reliability* as "the consistency, stability and repeatability of a data collection instrument" (p. 184). A reliable tool is one that provides consistent results when it is used repeatedly or by different investigators. In an attempt to achieve tool reliability because the questionnaire for this study had not been used before,

the researcher conducted a pilot with a convenience group of 5-10 students in the same age group at different high schools in the city to ensure that the questions were clear and understandable. The students were recruited for the pilot study on a one-to-one basis and were either acquaintances of the researcher or children of the researcher's co-workers. They completed the survey individually as they were recruited over a period of two months rather than as a group and then had an opportunity to discuss the survey with the principal investigator and clarify any misconceptions. The students reported that the questions were clear, and they had no difficulty in answering them. After the pilot study was completed, no further alterations were made to the survey tool.

Because this research tool also included open-ended questions to allow the students to express their own thoughts and ideas, it was necessary to consider the rigor of this qualitative research. Streubert-Speziale and Carpenter (2003) explained that rigor in qualitative research is "demonstrated through the researchers' attention to and confirmation of information discovery" (p. 38). They defined rigor as the demonstration of "credibility, dependability, confirmability and transferability" (p. 38). Efforts were made in this research to adhere to the principles of rigor to portray an accurate view of the research subjects. These principles included the use of direct quotations from the students' responses and careful attention to constructing themes and threads in the data.

Ethical Considerations

In every research study it is imperative that the participants be protected from harm. The University of Alberta Health Ethics Board, The University of Alberta Faculty of Education Ethics Review Board, the appropriate school board (through the Cooperative Activities Program), and the administrators at the chosen high school

granted approval for this study. Each of these bodies reviewed the research proposal and approved it based on their specific requirements. There was no chance of harm to the participants in this study because the parents and students were assured that their participation (or nonparticipation) in the study would not impact their school record or marks or any future relationship with the University of Alberta. The students' anonymity was guaranteed in the research process and the final report because there is no connection between the survey results and individual respondents.

Data Analysis

Quantitative data. Data were analyzed using the SPSS® 16.0 statistical computer software. Descriptive statistics such as frequencies and percentages provided a general description of sample characteristics. MANOVA tests were used to examine the interrelation among the outcomes measures of the group.

Qualitative data. Content analysis was used on the data generated from three open-ended questions in which the students were asked to express their opinions or ideas. Streubert-Speziale and Carpenter (2003) explained that data analysis in qualitative studies involves examining the data for "clustering of similar data . . . or themes" (p. 36). The students' answers to these questions were scrutinized to identify common themes or ideas for both groups of students. Once the themes were identified, a second researcher examined each set of data to verify and support the themes identified.

Results: Quantitative

Descriptive Data

Thirty two (10.7%) surveys were returned to the researcher, 31 from the first mailout and one from the second. Of the 32, 24 (75%) respondents were enrolled in the

leadership-training program, and 8 (22%) were not. Overall, females comprised 20 (62.5%) of the respondents and males 11 (34%). One leadership respondent did not indicate a gender. Fourteen Grade 12 students (44%), 10 Grade 11 students (31%), and 8 Grade 10 students (25%) completed the survey.

Of the leadership students who responded, 17 (71%) were female and 7 (29%) were male. Seven (29%) were in Grade 10, 10 (42%) were in Grade 11, and 8 (20%) were in Grade 12. Nineteen (79%) were enrolled in the international baccalaureate program, 9 (38%) were enrolled in sports, and 16 (67%) participated in some other activity such as part-time work, music lessons, student council, or volunteerism in the school or community.

Students who were not enrolled in the leadership program were 3 (38%) female and 5 (63%) male, with 6 (75%) in Grade 12 and 2 (26%) in Grade 10. These students were not enrolled in the international baccalaureate program as frequently as the leadership students (1, or 13%) as the leadership group, but were more active in sports (5, or 63%). Two (25%) participated in some type of music program. Table 4 lists the characteristics of the respondents.

Table 4

Characteristics of Respondents

		Leadership students percentage/number	Non-leadership students percentage/number
Gender	M	28% (7)	63% (5)
	F	68% (17)	38% (3)
* One student did not indicate gender			
Grade	10	29% (7)	25% (2)
	11	40% (10)	0% (0)
	12	29% (7)	75% (6)
Regular curriculum		20% (5)	88% (7)
International Baccalaureate		79% (19)	13% (1)
Participation	N	63% (15)	25% (2)
in sports	Y	38% (9)	75% (6)
Other programs/	N	33% (8)	75% (6)
activities	Y	67% (16)	25% (2)

Career Desirability

First, career desirability was examined for the whole group; then the statistical data were compared to examine significant relationships in two categories—leadership students versus nonleadership students, and males versus females—on their rankings of career desirability and the encouragement they thought they would receive from various adults if they considered a career in nursing. Figure 3 depicts the mean rankings for the desirability of each career for the entire group of respondents. Careers with the highest mean rankings (in descending order) include psychologist (3.00), doctor (2.87), engineer (2.81), entertainer (2.81), teacher (2.81), lawyer (2.62), physiotherapist (2.65), and nurse

(2.50). Careers with the lowest mean rankings (in ascending order) include plumber (1.31), construction worker (1.59), salesperson (1.96), electrician (2.00), childcare provider (2.18), accountant (2.31), computer programmer (2.37), and entrepreneur (2.46). Table 5 displays the means and standard deviation for career rankings by leadership and gender.

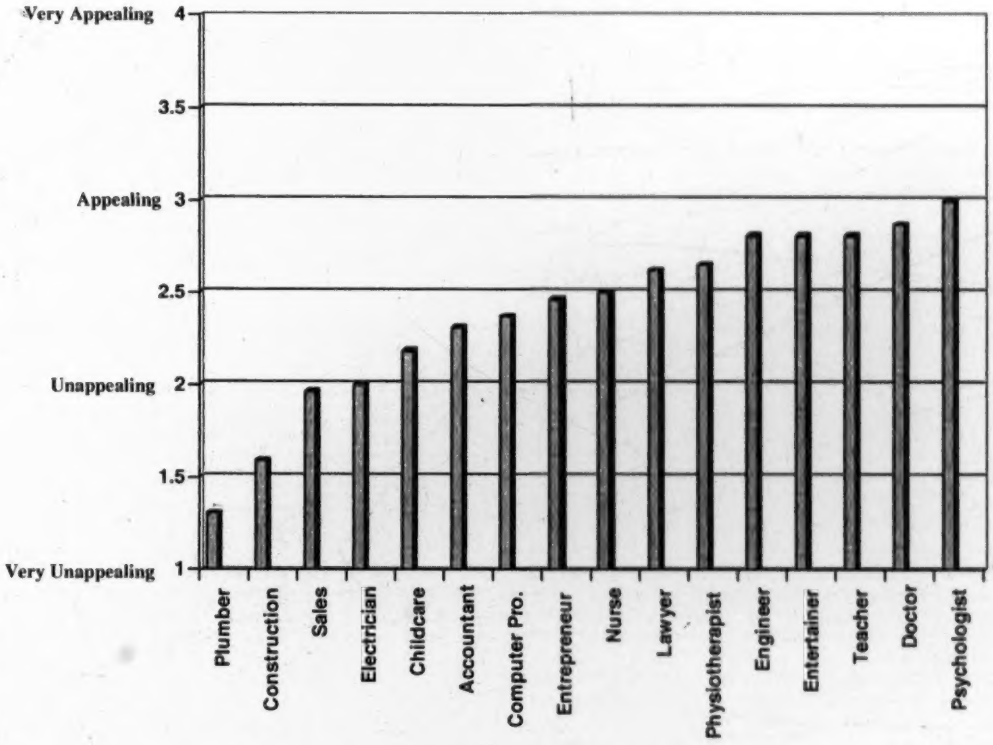

Figure 3. Mean rankings of career desirability.

Table 5

Means and Standard Deviation for Career Rankings by Leadership and Gender

Group membership/ career		N	Mean	Std. D	Gender		N	Mean	Std. D.
Accountant	LS	24	2.13	.992	Accountant	F	20	2.20	.236
	NLS	8	2.88	.641		M	11	2.64	.203
Childcare	LS	24	2.29	.955	Childcare	F	20	2.45	.185
	NLS	8	1.88	.835		M	11	1.55	.207
Computer LS		24	2,17	.177	Computer	F	20	1.85	.933
	NLS	8	1.88	1.126		M	11	2.55	.820
Construction	LS	24	1.50	.780	Construction	F	20	1.25	.444
	NLS	8	1.88	1.356		M	11	2.09	1.300
Doctor	LS	24	3.08	.929	Doctor	F	20	3.10	.968
	NLS	8	2.25	1.035		M	11	2.55	1.036
Electrician	LS	24	1.88	.680	Electrician	F	20	1.75	.716
	NLS	8	2.38	1.061		M	11	2.45	.820
Engineer	LS	24	2.54	.932	Engineer	F	20	2.65	.933
	NLS	8	3.63	.518		M	11	3.18	.982
Entertainer	LS	24	2.75	.897	Entertainer	F	20	2.65	.813
	NLS	8	3.00	1.195		M	11	3.00	1.183
Entrepreneur	LS	24	2.79	.180	Entrepreneur	F	20	2.40	.821
	NLS	8	2.50	.423		M	11	3.18	.982
Lawyer	LS	24	2.75	.737	Lawyer	F	20	2.85	.813
	NLS	8	2.25	1.165		M	11	2.18	.874
Nurse	LS	24	2.75	.989	Nurse	F	20	2.85	.875
	NLS	8	1.75	.707		M	11	1.82	.982
Physio	LS	24	2.79	.833	Physio	F	20	2.95	.826
	NLS	8	2.25	1.035		M	11	2.09	.831
Plumber	LS	24	1.25	.442	Plumber	F	20	1.15	.366
	NLS	8	1.50	.756		M	11	1.64	.674
Psychologist	LS	24	3.08	.929	Psychologist	F	20	3.15	.813
	NLS	8	2.75	.463		M	11	2.91	.701
Salesperson	LS	24	1.92	.929	Salesperson	F	20	1.90	.852
	NLS	8	2.13	.835		M	11	2.18	.982
Teacher	LS	24	2.92	.717	Teacher	F	20	2.85	.875
	NLS	8	2.50	1.069		M	11	2.82	.751

Once the mean rankings for the entire group were known, MANOVA was used to test for interrelationship between the leadership and nonleadership participants on the outcome measures across the whole group. The results indicate no significant differences ($p = .066$) between the overall rankings of careers by the students in and out of the leadership group. MANOVA was again run to identify relationships between career rankings and gender. The MANOVA results indicate no significant difference ($p = .166$) between the rankings of careers overall between males and females.

Nursing Encouragement

Students were also asked to rank the encouragement that they thought they would receive from various people to consider a career in nursing. MANOVA tests indicated no significant difference ($p = .266$) between the leadership and nonleadership students as a whole. Encouragement to consider nursing was then compared between genders, and the MANOVA tests indicated a significant difference ($p = .022$) between the genders as a whole in this category. ANOVA tests on each individual category showed a significant result only in the *friends* category ($p = .002$): The females believed that they would receive more encouragement to consider nursing than did the males.

Table 6

Means and Standard Deviation of Encouragement to Consider Nursing by Group and Gender

Group		Number	Mean	Std. D.	Gender		Number	Mean	Std. D.
Friends	LS	24	3.67	1.049	Friends	F	20	3.85	1.040
	NLS	8	2.75	1.035		M	11	2.64	.809
Mother	LS	24	3.58	1.349	Mother	F	20	3.70	1.342
	NLS	8	3.12	1.458		M	11	3.00	1.414
Father	LS	24	3.62	1.209	Father	F	20	3.80	1.105
	NLS	8	3.00	1.414		M	11	2.91	1.446
School	LS	24	3.88	.900	School	F	20	4.05	.759
counselor	NLS	8	3.62	.916	counselor	M	11	3.45	1.036
Teachers	LS	24	3.83	.917	Teachers	F	20	3.95	.826
	NLS	8	3.62	.744		M	11	3.55	.934

Results: Qualitative

Three questions on the survey were open-ended to allow the students to express their own ideas on and perceptions of careers. They asked the students to indicate three careers that offer the most leadership opportunities and three careers that offer the least leadership opportunities, what careers they were currently considering, and whether nursing was one of the careers that they were considering and why or why not. This survey revealed a glimpse into the differences in career perceptions and goals between students in leadership training and those not in leadership training, as well as the differences between males and females. In the responses to the questions on leadership opportunities, careers were grouped into a similar type of work before the count was completed. For example, *doctor* and *medicine* were considered the same career; likewise, *secretary* and *receptionist* were grouped together.

Careers With Leadership Opportunities

Teaching/professor emerged as the career that the students identified most often overall (21) as offering the most leadership opportunities, followed by business/ management as the second choice (20) and doctor/medicine as the third (11). Female students (7) in the leadership group were most likely to identify teaching as their first choice, whereas male students (5) in the leadership group were more likely to select business. Nonleadership male students (2) were most likely to pick teaching, and only one nonleadership female student chose any of the careers in the top three.

Other careers that more than one student identified as offering leadership opportunities include lawyer, engineer, and politician. One male and one female leadership student identified nursing as their third choice of career that would offer leadership potential, and no nonleadership students selected nursing as a career with leadership prospects.

The careers that the students identified as offering the least chance for leadership opportunities were more varied than those listed as offering the best opportunity for leadership. However, the careers identified most often were sales/cashier (11), followed by secretary/receptionist (8), and plumber (6). The female leadership students chose secretary/receptionist most often, and the choices of the male leadership students did not reveal any common trends; they chose occupations such as journalist, assembly-line worker, and fry cook. Females both in and out of the leadership program were also likely to choose sales/cashier as offering low leadership opportunities. Males and females both in and out of the leadership program equally chose plumber. Two students singled out nursing as the first career that would offer the least leadership potential (one male

leadership and one male nonleadership student), whereas one female leadership student chose nursing as her second choice in this category.

Current Career Aspirations

The students were asked to indicate a first and second choice for careers that they were currently considering and to cite the reasons that they might or might not consider a career in nursing. As with the answers to the questions on leadership opportunities, the careers that both the leadership and nonleadership students were considering were similar. All categories of students most often chose engineering as a career choice; six selected it as their first choice and four as their second choice. Males both in and out of leadership training and females in the leadership group indicated an interest in engineering.

Doctor/medical field was the first choice of students the second most often; five female leadership students and one male leadership student selected it. Doctor was also the second most common second choice; one male and one female leadership student chose it for a second choice. The third most common career selected as a first choice was lawyer, and the third most common second choice was teacher. Business was the fourth most common first choice, and lawyer was the fourth most common second choice.

Three students selected nursing as their first choice, but two of these students combined nursing with another healthcare profession. The two combinations were doctor/nurse/medical field and nurse/physical therapist. All three students who indicated an interest in nursing were in the leadership program; two were female (one combined with physical therapist), and one was male (combined with doctor/medical field). Two

students—one male and one female—identified an interest in nursing as a second choice; again, both were in leadership training (Table 7).

Table 7

Students' First and Second Most Often Indicated Career Choices

	Leadership		Nonleadership		
Career choice	Male	Female	Male	Female	Total
#1					
Engineering	2	3	1	0	6
Doctor	1	4	0	0	5
Business	2	1	1	0	4
Lawyer	0	2	0	1	3
#2					
Engineering	2	0	1	1	4
Doctor	1	1	0	0	2
Teacher	0	3	0	1	4
Lawyer	0	2	0	0	2
Nurse as #1	1 (combined with doctor/ medical field)	2 (1 combined with physical therapist)	0	0	3
Nurse as #2	1	1	0	0	2

Reasons for Choosing or not Choosing Nursing

The students' responses to this question were examined for recurring themes or ideas. For the students who indicated an interest in nursing, the overriding theme was a desire to "help people." One student wrote, *"I love taking care of people of all ages. . . . Many people I know have taken nursing or are nurses and love it"* (female/leadership). Another student stated, *"I've always wanted a medical career because it is a way to heal*

people physically & emotionally on a direct level. If I don't make it into med school as a doctor, nursing is my 2nd choice" (female/leadership). The second most common reason for considering nursing was an interest in the human body. The student who combined nursing with the doctor/medical field wrote, *"I have always been interested in the human body and used to watch all sorts of doctoring documentaries on television. It's a job that's very appealing to me"* (male/leadership). Only one student mentioned monetary reward and/or job opportunities as a reason for considering nursing: *"Good job opportunity, stable salary; able to use leadership skills; able to work and communicate with others. A very satisfying and accomplished (sic) job"* (male/leadership).

The students' reasons for not being interested in nursing also revealed common themes throughout. The most common reason was that the work of nurses is not appealing. For example, *"It's just that I am more interested in learning about new things and not so much about taking care of people, which I think nursing is all about"* (male/leadership); *"I'm not good with anything involving blood/guts/urine/ and would not really enjoy waiting on everyone"* (female/leadership); *"I would just rather not deal with sick people and blood and things like that"* (female/non-leadership); and *"It's a very demanding job where you must always be paying attention, and submitting to, the needs of patients. The tasks that the job consists of are not appealing to me"* (female/non-leadership).

Another theme was that nurses do not have control of their work life and/or the ability to make a real difference in the lives of those to whom they provide services. For example, *"I do not like hospitals and I feel nurses can be pushed around sometimes"* (female/leadership); *"Would rather do something more dominant, not like an assistant"*

(female/leadership); *"I've no interest in any career in the medical field. As well, nurses have an important role, but need to obtain approval from doctors to apply patient care changes"* (female/leadership); *"I'm not interested in shift work; it is a primarily female-dominated profession and I want to be in a primarily male one. . . . Focused on science-based careers, especially in biology"* (female/leadership); and *"It's not a choice because I feel that if I enter medicine and sciences, I might as well go the whole nine yards and become a doctor"* (female/leadership). Other reasons for not considering nursing include low pay, difficult work, and the inability to deal with patients' emotions.

Discussion

The purpose of this research study was to examine the career choices, influences, and perceived leadership opportunities in various careers among students who were participating in a leadership-training program at a local high school. The results demonstrate no variance between students in or out of the program as a whole on how they rated the desirability of various careers.. When the rankings of the careers were compared between genders, again no significant differences were found.

These survey findings are similar to the results of the systematic literature review in that students chose careers that were of interest to them (Lee, 1998, Mendez & Crawford, 2002) regardless of considerations such as being labeled gifted or participating in programs such as leadership development. The systematic review also suggested that girls feel freer than boys to choose careers that are not traditionally gender specific, but this was not demonstrated in this study.

The students in this study felt that all of the adults in their lives would encourage them to consider a career in nursing, and the females felt that their friends were more

likely to encourage them to pursue nursing. This suggests that the image of nursing has improved in recent years because more people, particularly adults, are considering it a worthy career choice rather than a waste of time (Whatley, 1998; Wilgosh, 2001). If, as the literature suggested, a mother's encouragement to pursue a particular career path is most influential on a young person's career choices (Fieberg, 2003; Grant, 2000), followed by father, high school counselor and teacher, the perceived encouragement to consider nursing in this study should indicate that these students would consider nursing as a career option.

This, however, is not the case. Few students, either in or out of the leadership program, were considering a career in nursing, and the majority of those who stated that they were combined it with some other career in healthcare, such as doctor, which suggests that nursing would be a fallback plan if the first choice did not pan out. The majority of these students' choices are careers that would be considered high prestige, high status, and high paying. Their reasons for not considering nursing reinforce many of the stereotypes about nursing, such as a lack of practice control, decision-making ability and leadership; the "dirty," unpleasant, and demanding work; and the idea that nurses are mere assistants to doctors (Hemsley-Brown & Foskett, 1999). The students in this study seemed to view all nurses as working in hospitals and not did seem to recognize the variety of workplace options open to registered nurses. The categories that the students identified as reasons for not considering nursing are very similar to the categories in which *Money* magazine ranked the nursing profession as below average (Kalwarski et al., 2006). Even those students who indicated a desire to enter nursing focused primarily on the caring and helping aspect of nursing—again, in a hospital setting—rather than on

aspects of the profession that include critical thinking, decision making, and leadership that the CNA (2008) envisioned.

Even though the majority of these students were enrolled in a leadership-training program, their identified choices are not careers that they themselves saw as offering leadership opportunities. The students most often chose teaching and business as careers that offer leadership opportunities, but neither of these careers was in the top three that the students were currently considering. Doctor, the career chosen the third most often as offering leadership potential, was the second most selected career choice for these students. This suggests that even though they were enrolled in a leadership-training program, they did not use leadership opportunities as a criterion in considering options for their own careers.

The results of this study indicate that the ranking of careers, career aspirations, and encouragement to consider nursing was not significantly different between students in and out of a leadership-training program. The majority of students in either program indicated a desire for a career with high prestige and social status. Even though significant others in their lives would encourage a career in nursing; these students did not want to pursue that path.

Limitations

The data analysis and generalizability of the findings were limited by the low return rate of the surveys. The need for students to obtain parental consent before they could participate in the study hampered the researcher's ability to administer the survey directly to the students in the classroom, which would have ensured a larger return rate and permitted more powerful analysis. Another limitation of this study is the large

disparity between the number of leadership students and nonleadership students who completed the survey. This may be a result of the leadership students' teacher's emphasis on the importance of the survey.

Although the survey in this study does not yet have a high reliability rating, a pilot was conducted beforehand, and the returned surveys had few missing data. More testing of the tool would increase its reliability. Rigor or trustworthiness in this study would increase if the researcher were to return to the students in the study to confirm the content analysis of their answers with the open-ended questions or if students in other high schools were to find that the information gathered was credible and they could relate to the results. These steps were not taken at this time.

Recommendations

Because this study was descriptive/exploratory in nature, more research is required with this particular population of high school students in leadership training on their career perceptions, aspirations, and influences. It would be beneficial to conduct research in a venue or setting where parents are present with their children to facilitate the gathering of parental consent. Having to rely on students to take the information home to their parents and be motivated to complete the survey on their own certainly impacted the return rate in this study. Research should also be conducted on a wide variety of high school populations such as rural and urban, as well as students in various parts of the country, because perceptions of careers and career goals may reveal regional differences.

A second recommendation arising from this current study, as well as a review of the literature, is to address the image of nursing. This literature (see, e.g., Al-Kandari &

Lew, 2005; Cohen et al, 2004; Hemsley-Brown & Foskett, 1999) suggested that students have a narrow view of the work of nurses and that most would not consider nursing as a career choice, or at least not as a first choice. The students in this study were similar to the students involved in the studies in the literature (see above references), as evidenced by their comments with regard to nursing. They held stereotypical views of the work of nurses: that nursing work is "dirty" and of low importance and that nurses do not have control of the practice or are not able to make independent decisions. The students seemed to believe that nurses work only in hospitals. Therefore, professional nursing bodies must address the image of nursing by emphasizing the critical-thinking, decision-making, and leadership aspects of the profession, particularly with this special group of high school students. The wide range of career opportunities available to nurses and the potential for leadership positions throughout the healthcare system should also be highlighted for high school students. If nursing can be successful in attracting this type of student, it may in turn improve the status and prestige of the nursing profession. This will then make the profession more attractive to these students.

A final recommendation addresses the recruitment of students into nursing. Because the majority of leadership students indicated that they did not intend to pursue a career in nursing, a change in recruitment strategies may be required. Many faculties in colleges and universities actively recruit students whom they would like to see attend their institution. Faculties of nursing need to follow this trend to attract students who demonstrate personal and intellectual abilities that will enhance the nursing profession. Faculties need to work with high schools across Canada to identify students who have demonstrated superior abilities and present these students with incentives such as

scholarships, mentoring, and relocation assistance. These students could be invited to special information receptions where they would have the opportunity to meet with nursing leaders, frontline nurses, faculty, and employers to increase their knowledge of and appreciation for the nursing profession. This strategy may yield surprisingly effective results.

Conclusion

The results of this research indicate no significant difference in the rankings of career desirability and perceived encouragement to consider a career in nursing between students who were participating in a leadership training program in high school and those who were not. Significant statistic differences were found in the perceived encouragement to consider nursing, with females believing they would receive more encouragement from their friends. Few students either in or out of the leadership program were considering nursing as a career even though they all perceived that they would receive encouragement to do so. Those who were considering nursing indicated a desire to help or care for people as their main motivation. Those who were not considering nursing stated that the work of nurses, as they perceived it, did not appeal to them. Both those considering nursing and those not considering nursing had stereotypical views of the work of nurses.

The CNA (2008) has a vision for nursing that will greatly alter the practice of nursing in the future. To make this vision a reality, the profession needs to recruit students who share the vision and have the capabilities to meet the challenges ahead to effect real, meaningful changes in the nursing profession. If the views of the students in this study on nursing and the desirability of a career in nursing indicate the views of high

school students across Canada, more needs to be done to highlight the benefits of a career in nursing. The ability to attract students who have demonstrated leadership abilities while still in high school, who are articulate, innovative, bold, and politically astute, will go a long way to achieving the CNA's *Toward 2020: Vision for Nursing*.

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APPENDIX A: CAREER INTEREST SURVEY

Background Information:

Grade: 10 11 12 (circle one)

Program Enrolled and Extracurricular Activities: (circle all that apply)

Regular High School curriculum

International Baccalaureate curriculum

Leadership Training

Sports

Other (specify) _____

Male or Female

Please respond to the following questions:

1. List three jobs you think will provide the most leadership opportunities:

a.

b.

c.

2. List three jobs you think will provide the least leadership opportunities

a.

b.

c.

3. Consider the following careers and indicate how much each would appeal or not appeal to you.

	Very Unappealing	Unappealing	Appealing	Very Appealing
Accountant	1	2	3	4
Childcare Provider	1	2	3	4
Computer Programmer	1	2	3	4
Construction Worker	1	2	3	4
Doctor	1	2	3	4
Electrician	1	2	3	4
Engineer	1	2	3	4
Entertainment Industry	1	2	3	4
Entrepreneur	1	2	3	4
Lawyer	1	2	3	4
Nurse	1	2	3	4
Physical Therapist	1	2	3	4
Plumber	1	2	3	4
Psychologist	1	2	3	4
Salesperson	1	2	3	4
Teacher	1	2	3	4

4. What careers are you currently thinking of pursuing?

1st Choice:

2nd Choice:

If nursing ***IS*** one of your choices, please indicate why.

_____

_____

_____

If nursing is ***NOT*** one of your choices, please indicate why not.

_____

_____

_____

5. How do you think the following people would respond ***if*** you were to consider a career in nursing?

	Very Discouraging	Discouraging	Neither Discouraging or Encouraging	Encouraging	Very Encouraging
Friends	1	2	3	4	5
Mother	1	2	3	4	5
Father	1	2	3	4	5
School Counselor	1	2	3	4	5
Teachers	1	2	3	4	5

APPENDIX B: INFORMATION LETTER

High School Students Career Aspirations and Influences

Dear Parents/Students:

Your child is invited to participate in an important study in which we will be looking at the career aspirations and influences of high school students in a variety of learning options and clubs (i.e. Regular Programming, International Baccalaureate, Leadership in Training, Sports, etc.). The information that you can provide relates to your son or daughter's opinions regarding the desirability of a variety of careers, his/her views on which careers will offer leadership opportunities and who in his/her life would encourage a career choice in nursing. Your participation in this study will be vital in allowing our research team to analyze the perceptions of high school students about different careers, and nursing in particular, in order to develop recruitment and marketing strategies for this age group.

Your child's response to this survey will be completely anonymous. The number on the attached survey is a code to allow us to determine how many surveys have been returned. Please also read and sign the consent form, (keep a copy for yourself), and place the signed consent in the attached envelope. Once your child has completed the enclosed survey, please send it along with the sealed consent in the self-addressed stamped envelope to The Faculty of Nursing, University of Alberta. The processing of data by the Faculty of Nursing is governed by the ethics and confidentiality protocols of the University. Data will be collected by an independent party, which will forward the final datasets to the researcher, without any identifiers of individual students, classrooms or teachers. Only code numbers will be provided for analysis. Neither the research team nor the high school will be given any names of respondents in this study.

All data from this study will be preserved using record management standards that protect the privacy of the participants in the project and that guard against the disclosure of individual information. The data may be used for other research in the future. If this is done, proper ethical review will be obtained to ensure the same practices of confidentiality are observed as within this study.

The results of this study may not specifically benefit you directly; however the results are expected to influences nursing recruitment strategies, and possibility career counseling of high school students in the future.

If you have any questions about this study, please contact me at 780-492-8703 or at gretac@ualberta.ca. I encourage you to participate in this study.

Sincerely,

Dr. Greta Cummings RN, PhD

APPENDIX C: CONSENT FORM

Research Title: High School Students Career Aspirations and Influences
Investigators: Kathleen Miller, RN, BScN, (University of Alberta) and Greta Cummings RN, PhD. (University of Alberta)

Your child has been invited to participate in a study examining the career aspirations and influences of high school students because your child attends a high school that offers a variety of learning tracts and extracurricular activities. Please read this form carefully, and if you and your child decide to participate, indicate your consent at the end.

What the study is about: The purpose of this study is to investigate your child's opinions regarding the desirability of a variety of careers, views on which careers will offer leadership opportunities, current career aspirations and who would encourage a career choice in nursing.

What we will ask your child to do: If you/your child agree to participate, your child will complete a one-time survey. This survey includes questions about grade, program of study, and participation in extracurricular activities. Your child will then be asked to list 3 careers most likely to provide leadership opportunities and 3 careers least likely to provide leadership opportunities. The student will then be asked to rank a variety of careers' desirability, current career aspirations and indicate who would be likely to encourage a career in nursing.

Risks: There are no known risks associated with participation in this study. Neither the research team nor the high school will be given any names of respondents in this study.

Benefits: Student participating in this research may gain insight into their own career aspirations, as well, the answers they provide may help other high school students in the future.

Taking part is voluntary: Taking part in this study is completely voluntary. Your child may skip questions if desired. If your child decides not to take part or to skip some of the questions, it will not affect current or future relationships with the high school and/or current or future relationship with the University of Alberta. Surveys are different colors to help researchers track different mailing batches. The colors will not identify your child in any way.

Your answers will be confidential: The records of this study will be kept private. In any sort of report we make public, we will not include any information that will make it possible to identify your child. Research records will be kept in a locked file; only the researchers will have access to the records, which will be destroyed after seven years.

If you have questions: If you have concerns about any aspect of this study, you may contact Dr. Christine Newborn-Cook, Associate Dean Research, Faculty of Nursing at (780) 492-6764. This office is not involved with the research project.
Please retain one copy of this consent for your records and return a signed copy in the enclosed envelope to the Faculty of Nursing, University of Alberta

Statement of consent: I have read the above information and give consent for my child to participate.

Parent's Signature _____ Date _____
Student's Signature _____ Date _____